(19) Japanese Patent Office (JP) (12) The Laid-Open Patent Gazette (A) (11) Publication Number: Laid-open Patent H1-168607

(43) Publication date: 4 July 1989

(51) Int.Cl.4 Identification Code JPO File Nos.
A61K 7/02 Z-7306-4C
7/025 7306-4C

Request for Examination Not received Number of Claims: 1 (Total of 5 sheets)

(54) Title of the Invention Polishing composition

(21) Application no. Patent application Showa 62-327904
(22) Application date: 24 December Showa 62 (1987)

(72) Inventor Ikeda Toshihide
Shiseido Laboratories Co., Ltd
1050 Nippa-cho, Kohoku-ku, Yokohama-shi, Kanagawa-ken

(72) Inventor Minami Koji
Address as above

(71) Applicant Shiseido Co., Ltd, 7-5-5 Ginza, Chuo-ku, Tokyo

Specification

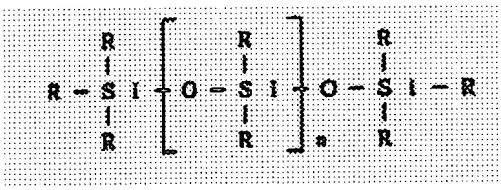
1. Title of the invention
Polishing composition

2. Scope of Claims
(1) A polishing composition, characterized in that its essential ingredients are an organic silicone resin comprising units of the average formula (A), a silicone oil component with a low degree of polymerization as shown in general formula (B), and hydrocarbon wax.

(A) $RnSiO_{(4-n)/2}$

(R represents an alkyl or phenyl base whose carbon number is 1-6, and n represents a number from 1.0 to 1.8.)

(B)



(n represents an integer from 1-20, and R represents an alkyl or phenyl base whose carbon number is 1-6)

3. Detailed explanation of the invention

[Industrial field of application]

The present invention relates to a polishing composition, which is composed by blending an organic silicone resin having a three-dimensional network structure, a silicone oil component having a low degree of polymerization, and hydrocarbon wax; and which has an excellent glossy sheen, good usability, and furthermore little sense of stickiness.

[Prior art]

Polishing lipstick compositions (lip glosses) are used on their own, or by application on top of already applied lipstick, to give lips lustre (a glossy feeling); they are sold commercially in various forms such as sticks and pots.

High viscosity oil components such as castor oil, olive oil, lanolins, polybutene, and sugar esters such as sucrose acetate isobutyrate are normally cited as the oil component which contributes the gloss effect. Despite the gloss effect, however, the usability of each of these oil components was poor due to the high viscosity, and

they left a feeling of stickiness after application.

People who enjoyed using lipstick longed for a lip gloss that would be easy to use and feel less greasy.

Those in the business might easily think of blending in a high viscosity silicone oil component (for example a dimethyl polysiloxane oil component of at least 5000 cs) as a method for reconciling such contrary objectives. However, although silicone-based high viscosity oil components are easy to use and feel refreshingly light, and also have a gloss effect, they are difficult to turn into products as their compatibility with the hydrocarbon waxes which normally constitute the main wax in lipstick is extremely bad, and pigment wettability is also poor, and as shape retention in particular is impossible, it proved extremely difficult to develop applications for the stick or pot types of lip gloss which make up the majority of the market.

[Problems which the invention is intended to solve]

The purpose of the current this invention is to obtain stick or pot types of lip gloss with good usability, a grease-free feeling and a gloss effect, by dissolving organic silicone resin whose direction of polymerization is not linear but three-dimensional, and which therefore has good compatibility with hydrocarbon wax, in a silicone oil component with a low degree of polymerization, which similarly has good compatibility with hydrocarbon wax, so as to produce a solution with suitable viscosity (preferably 5000-20,000 cs), and use this as the main base for blending. In other words, the current invention starts with the development of a high viscosity silicone oil component which dissolves hydrocarbon wax.

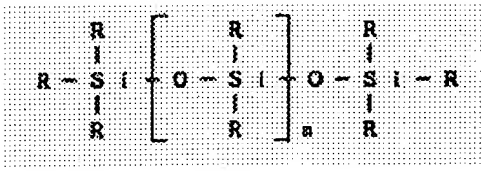
[Means for solving the problems]

Hence, the current invention is a polishing composition, characterized in that its essential ingredients are an organic silicone resin comprising units of the average formula (A), a silicone oil component with a low degree of polymerization as shown in general formula (B), and hydrocarbon wax.

(A) $RnSiO_{(4-n)/2}$

(R represents an alkyl or phenyl base whose carbon number is 1-6, and n represents a number from 1.0 to 1.8.)

(B)



(n represents an integer from 1-20, and R represents an alkyl or phenyl base whose carbon number is 1-6)

The constitution of the current invention will now be explained in detail.

The organic silicone resin used in the current invention comprises suitable combinations of R_3SiO units, R_2SiO units, RSiO units and SiO_2 units, and the proportions thereof are selected so as to satisfy the average formula RnSiO (n representing a number from 1.0 to 1.8). The molecular weight is preferably 1,500-200,000.

The above organic silicone resin is soluble in benzene, and can be produced by a variety of means. To cite one example, compounds shown by the general formulae R_3SiX, R_2SiX_2, $RSiX_3$ and SiX_4 (where X represents a hydrolyzable group, for example chlorine, bromine, fluorine, an alkoxy group, for example methoxy, ethoxy, or an acycloxy group) are added to suitable solvents such as toluene, benzene, xylene, etc., as suits the target resin composition, and next this solvent is added to a quantity of water adequate for obtaining the desired hydrolysis and co-condensation in a suitable acid solvent. The target organic silicone resin is then obtained by removing the aqueous phase from the two-phase system obtained in this way, neutralizing the residual resinoid substance with sufficient quantities of sodium bicarbonate or other alkali substances, and distilling off the solvent.

The proportion of organic silicone resin in the current invention varies depending on the resin composition, but is 10-90 wt% of the entire polishing composition, preferably 30-60 wt%.

The silicone oil component with low degree of polymerization in the current invention is of a type where the value n in the general formulae for dimethyl polysiloxane and methyl phenyl polysiloxane is 20 or less, preferably 3-15. If n is larger than 20, compatibility with the hydrocarbon wax is poor and mutual separation occurs, or shape retention becomes impossible.

The proportions of the organic silicone resin and the silicone oil component with low degree of polymerization in the current invention vary depending on the resin composition, molecular weight, degree of polymerization of the oil component, etc.; the blended viscosity should be adjusted to 3000-200,000 cs.

The hydrocarbon wax in the current invention can be anything generally used in cosmetic materials etc., for example microcrystalline wax, polyethylene wax, ceresin wax, and the like. The proportion of hydrocarbon wax

varies depending on its solidifying power with respect to the oil component, but is 0.5-25 wt% of the whole polishing composition, preferably 3-10 wt%. If it is less than 0.5 wt% shape cannot be retained, and if it is greater than 25 wt% the glossy sheen is lost.

Where needed it is possible to blend the polishing composition of the current invention with waxes, oil components, water, humectants, surfactants, pigments, resins, clay minerals, antioxidants, preservatives, UV inhibitors, perfumes, etc., as long as this does not detract from the benefits of the current invention.

[Benefits of the invention]

The polishing composition of the present invention is a stick or pot type of polishing composition blended from an organic silicone resin, a silicone oil component with a low degree of polymerization, and hydrocarbon wax, and it spreads easily and has an excellent, refreshing feeling.

[Embodiments]

The present invention will now be explained in more detail based on embodiments. The present invention is not limited to these. Proportions are wt%. Before the embodiments, the methods used for testing the benefits and the standards for appraisal will be explained.

Compatibility with wax

Wax is mixed into the single or combined oil component(s) at 10% concentration, heated to 90°C and dissolved. Items which dissolve transparently with the wax at this time are shown with a circle, while those which are opaque or in two separate layers are shown with a cross.

Usability

We performed sensory appraisals with 50 women aged 18-35, regarding stickiness, grease-free feeling and good usability. Each category was given a 5-rank appraisal, and if the average of the 50 people was 4.2 or above it was shown with a circle, while 4.1-3.5 was a square, 3.4-2.6 a triangle, and 2.5 or below a cross.

Gloss effect

The sample was coated onto parchment and measured using a glossmeter manufactured by Nippon Denshoku Industries Co., Ltd, then the degree of gloss was shown as a percentage compared to the standard glossy sheet.

Embodiment 1, comparative examples 1 and 2

Lip gloss was prepared based on the formulation shown in table 1, and its compatibility, usability and gloss effect were evaluated.

Table 1

	Comparative example 1	Embodiment 1	Comparative example 2
Liquid lanolin (3500 cs)	25	-	-
Polybutene (12,000 cs)	45	-	-
Organic silicone resin *1	-	50	-
Dimethyl polysiloxane (n=8)	-	20	-
Dimethyl polysiloxane (n=500)	-	-	70
Castor oil	17.99	-	-
Liquid paraffin	-	17.99	17.99
Ceresin wax	10	10	10
Red colour no. 202	1.5	1.5	1.5
Red iron oxide	0.5	0.5	0.5
Perfume	0.01	0.01	0.01
Viscosity	5000 cs	5000 cs	5000 cs
Compatibility with wax	O	O	X
No stickiness	X	O	O
Good usability	X	O	O
Gloss effect	61	62	57

*1 Organic silicone resin having a molecular weight of approximately 5000, and expressed by the average formula $(CH_3)SiO$, comprising $(Ch_3)_3SiO$ units : SiO_2 units = 1.5 : 1.

As can be seen from table 1, each sample has an adequate glossy feeling, but the lip gloss of comparative example 1, blended with lanolin and polybutene, is sticky and hard to spread. Also, the lip gloss blended with dimethyl polysiloxane (n=500) showed poor compatibility with the hydrocarbon wax, and did not form the

product's shape. The lip gloss of the present invention showed good compatibility between the oil component and hydrocarbon wax, sufficiently manifested the grease-free feeling and good usability which are characteristics of silicon, and swept away the conventional concept of lip gloss as "glossy but sticky".

Embodiment 2	Lip gloss in paste form
Microcrystalline wax	12.0
Vaseline	20.0
Silicone KF56 *1	20.0
Organic silicone resin *2	47.0
Titanated mica	0.9
Perfume	0.1
Total	100.0

*1 Dimethyl polysiloxane manufactured by Shin-Etsu Chemical Co., Ltd

*2 Organic silicone resin having a molecular weight of approximately 3000, and expressed by the average formula $(CH_3)_{1.33}SiO_{1.34}$, comprising $(Ch_3)_3SiO_{1/2}$ units : SiO_2 units = 0.8 : 1.

(Method of manufacture)

The organic silicone resin is dissolved in the silicone KF56, and a viscous, transparent solution is obtained. Next, wax is added and dissolved at 90°C. Further, titanated mica and perfume are added, and dispersion mixed at 85°C. After deaeration, it is filled into a tube-shaped receptacle. As shown in the score in table 2, embodiment 2 had no stickiness, a refreshing feel, good usability too, and an adequate gloss effect as well.

Embodiment 3, comparative examples 3 and 4 Lip gloss

	Embodiment 3	Comparative example 3	Comparative example 4
Ceresin wax	15	15	15
Polybutene	-	-	65
Liquid paraffin	5	24	19
Organic silicone resin *1	50	-	-
Silicone KF96L *2	29	-	-
Silicone KF96H *3	-	60	-
Red colour no. 202	0.9	0.9	0.9
Perfume	0.1	0.1	0.1
Total	100.0	100.0	100.0

*1 Organic silicone resin having a molecular weight of approximately 30,000, and expressed by the average formula $(CH_3)_{0.25}(C_6H_5)_{0.63}SiO_{1.90}$, comprising $(C_6H_5)SiO_{2/3}$ units : $(CH_3)_2SiO$ units = 5.67 : 1.

*2 Dimethyl polysiloxane with a low degree of polymerization (n=8) manufactured by Shin-Etsu Chemical Co., Ltd

*3 Dimethyl polysiloxane with a high degree of polymerization (n=500) manufactured by Shin-Etsu Chemical Co., Ltd

(Method of manufacture)

As in embodiment 2. After production, it is filled into the prescribed stick receptacles.

As shown by the scores in table 2, embodiment 3 has no stickiness, a grease-free feeling, good usability too, and an adequate gloss effect as well. Although comparative example 3 does have a grease-free feeling, the wax does not dissolve in the main oil, silicone KF96H, so it cannot be made a homogenous composition. Also, although comparative example 4 has a gloss effect, its usability is poor and some stickiness is felt.

Embodiment 4	Emulsified lip gloss
Polyethylene wax	6.0
Ceresin wax	5.0
Dimethyl polysiloxane (n=1-2)	10.0
Organic silicone resin *1	70.0
Pure water	5.0
Laponite XLG *2	1.0
Silicone KF945 *3	0.5
dL-pyrolidone carboxylic acid	0.3
Glycerine	0.7

Iron oxide red	0.2
Titanium dioxide	0.5
Blue colour no. 1	0.1
Ethylparaben	0.3
Dibutyl hydroxytoluene	0.1
Perfume	0.3
Total	100.0

*1 Organic silicone resin having a molecular weight of approximately 5000, and expressed by the average formula $(CH_3)_{1.23}(C_6H_5)_{0.18}SiO_{1.30}$, comprising $(CH_3)_3SiO_{1/2}$ units : $(C_6H_5)_2SiO$ units : $(C_6H_5)SiO_{2/3}$ units : SiO_2 units = 0.9 : 0.1 : 0.2 : 1.0.

*2 Synthetic hectorite manufactured by Laporte UK

*3 Polyether modified dimethyl polysiloxane manufactured by Shin-Etsu Chemical Co., Ltd

(Method of manufacture)

The dimethyl polysiloxane is added to the organic silicone resin and made into a paste, then wax, pigment, preservative, antioxidant, and silicone KF945 are added, and dispersed at 90°C. Next the laponite is added and dispersed in the same way. Water and humectant are gradually added at 85°C, and dispersed with a homomixer. After deaeration, perfume is added and it is gently stirred. At 80°C, it is filled into the prescribed stick and solidified.

As the scores in table 2 show, embodiment 4 was a stick type of lip gloss which had no stickiness, a grease-free feeling, good usability too, and an adequate gloss effect as well.

Table 2

	No stickiness	Refreshing feel	Good usability
Embodiment 2	O	O	O
Embodiment 3	O	O	O
Embodiment 4	O	O	O
Comparative example 3	O	O	Δ
Comparative example 4	X	X	X

Note that comparative example 3 has bad compatibility, so cannot be formed into a cosmetic material.

Patent applicantShiseido Co., Ltd